

METHOD AND APPARATUS FOR MAGNETIC RESONANCE IMAGING

Abstract

A magnetic field generator for producing a homogenous magnetic field region. The magnetic field generator comprises: a plurality of main magnet coils arranged in a cylindrical fashion; a plurality of shielding coils arranged in a cylindrical fashion, and located radially outward of the plurality of magnets; and wherein the main magnet coils and shielding coils are configured to shape a magnetic field which comprises at least one low fringe field region when in operation. A method for designing an MRI system that produces a low fringe field region. The method comprises: defining a solution space; defining a field of view, a center field and homogeneity requirements; defining fringe field requirements; and running an optimization algorithm to determine coil positions.